CHAPTER 9. TRIAL STANDARD LEVELS

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9.1 INTRODUCTION

DOE generated NES and NPV results based on trial standard levels (TSLs). The TSLs are based on the following: (1) candidate standard (efficiency) levels identified in the Advance Notice of Proposed Rulemaking (ANOPR) published in November 15, 2007,[1] (2) the candidate standard level identified with the maximum efficiency, and (3) a combination of candidate standard levels for different equipment classes that have potentially positive impacts on consumers and the Nation.

The technical support document (TSD) for DOE's notice of proposed rulemaking (NOPR) covered conventional cooking products (i.e., cooktops and ovens), microwave oven energy factor (EF), microwave oven standby power consumption, and commercial clothes washers (CCW).[2] This chapter presents information and results pertaining solely to conventional cooking products and microwave oven EF. The impact of more-efficient equipment on microwave oven standby power and CCWs will be addressed in subsequent TSDs.

9.2 COOKTOPS AND OVENS

Table 9.2.1 shows the TSLs for conventional cooking products. As discussed in Chapter 4, Screening Analysis, DOE conducts a screening analysis to determine the design options that are technologically feasible and can be considered as measures to improve product efficiency. However, there are few design options available for improving the efficiency of these cooking products due to physical limitations on energy transfer to the food load. This is particularly the case for all cooktop and self-cleaning oven product classes. For electric cooktops, DOE was able to identify only a single design change for analysis. For gas cooktops and electric self-cleaning ovens, DOE was able to identify two design options for analysis. And for gas self-cleaning ovens, DOE was able to identify three design options for analysis. Although DOE considered several design options for standard ovens, with the exception of eliminating standing pilots for gas standard ovens, none significantly increased product efficiency. Specifically, eliminating standing pilots reduces overall gas consumption by over 50 percent while all other design options reduce gas consumption by approximately two percent. Therefore, DOE gave further consideration to only four TSLs for conventional cooking products.

TSL 1 represents the elimination of standing pilot ignition systems from gas cooking products. All other product classes are unaffected by TSL 1, including gas self-cleaning ovens, which are not allowed to use standing pilot ignition systems because they already use electricity and come equipped with power cords to enable the self-cleaning cycle. Under TSL 1, DOE's current prescriptive standard of disallowing the use of standing pilot ignition systems in gas cooking pilots equipped with power cords would be extended to all gas cooking products, regardless of whether the appliance is equipped with a power cord. Also, under TSL 1, there

would be no need for DOE to regulate the EF of any of the conventional cooking product classes because only standing pilot ignition systems are being affected.

TSL 2 for conventional cooking products consists of the candidate standard levels from each of the product classes that provide a majority of consumers (who are impacted by the standard) with an economic benefit. Based on this criterion, only electric coil cooktops and electric standard ovens have candidate standard levels that differ from those in TSL 1. In other words, for the remaining five product classes (electric smooth cooktops, electric self-cleaning ovens, and all gas cooking product classes), analytical results indicate there is no candidate standard level that provides an economic benefit to a majority of consumers.

TSL 3 for conventional cooking products consists of the same candidate standard levels as TSL 2, with the exception of the gas self-cleaning oven product class. For gas self-cleaning ovens, the design option that provides, on average, a small level of economic benefit to consumers is included.

TSL 4 is the maximum technologically feasible level.

Table 9.2.1 summarizes the four TSLs for cooktops and ovens.

Table 9.2.1 Trial Standard Levels for Cooktops and Ovens

	Trial standard levels (EF)			
Product classes	**TSL 1**	**TSL 2**	**TSL 3**	**TSL 4**
Electric Coil Cooktops	No Standard	0.769	0.769	0.769
Electric Smooth Cooktops	No Standard	No Standard	No Standard	0.753
Gas Cooktops	No Pilot	No Pilot	No Pilot	0.420
Electric Standard Ovens	No Standard	0.1163	0.1163	0.1209
Electric Self-Cleaning Ovens	No Standard	No Standard	No Standard	0.1123
Gas Standard Ovens	No Pilot	No Pilot	No Pilot	0.0600
Gas Self-Cleaning Ovens	No New Standard*	No New Standard*	0.0625	0.0632

* Gas self-cleaning ovens are already required to use pilotless ignition systems because they are equipped with power cords.

9.3 MICROWAVE OVENS

Table 9.3.1 shows the TSLs for the regulation of cooking efficiency or EF. TSLs 1 though 4 correspond to candidate standard levels 1 through 4, respectively.

Table 9.3.1 Trial Standard Levels for Microwave Oven EF

	Trial standard levels			
	TSL 1	**TSL 2**	**TSL 3**	**TSL 4**
EF	0.586	0.588	0.597	0.602

REFERENCES

[1] U.S. Department of Energy-Office of Energy Efficiency and Renewable Energy, Energy Conservation Program: Energy Conservation Standards for Certain Consumer Products (Dishwashers, Dehumidifiers, Electric and Gas Kitchen Ranges and Ovens, and Microwave Ovens) and for Certain Commercial and Industrial Equipment (Commercial Clothes Washers); Advance Notice of Proposed Rulemaking and Notice of Public Meeting. *Federal Register*, 2007. 72(220): pp. 64432-64515.

[2] U.S. Department of Energy-Office of Energy Efficiency and Renewable Energy. *Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Residential Dishwashers, Dehumidifiers, Cooking Products, and Commercial Clothes Washers*, September, 2008. Washington, DC. <http://www1.eere.energy.gov/buildings/appliance_standards/residential/home_appl_tsd.html>